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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/473,263 12/27/99 KINSMAN

L 3399.2US

MM92/0621

EXAMINER

CRUZ, L

ART UNIT	PAPER NUMBER
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2815

DATE MAILED:

06/21/01

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BRICK G POWER
TRASK BRITT & ROSSA
P O BOX 2550
SALT LAKE CITY UT 84110

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

<p align="center">Office Action Summary</p>	<p>Application No.</p> <p>09/473,263</p>	<p>Applicant(s)</p> <p>KINSMAN, LARRY D.</p>	
	<p>Examiner</p> <p>Lourdes C. Cruz</p>	<p>Art Unit</p> <p>2815</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 1999 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- | | |
|---|--|
| 15) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 18) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 16) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 19) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 17) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2</u> . | 20) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to an Application filed December 27, 1999.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the footing being disposed on said surface of claim 7 must be shown or the features canceled from the claims. No new matter should be entered.

Claim Objections

Claim 2 is objected to because of the following informalities: "bum" should be bump. Appropriate correction is required.

Claim 9 recites "to form a joints". Correction is required.

Claim 19 recites the phrase "substantially perpendicularly relative", which makes the claim unclear. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 7 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the formation of a support footing, does not reasonably provide enablement for said support footing being disposed on said surface of said semiconductor device. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly

connected, to make the invention commensurate in scope with these claims. See that Claim one defines only one surface, this one surface being the one having pads disposed on it. Claim 7 implies that there is another footing formed on the same surface on which said bond pads are disposed. See that if Applicant inadvertently miss-defined this one surface, when redrafting claim 7 Applicant would duplicate claim 6 making it objectionable. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 15-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "said carrier substrate" lacks antecedent basis.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Beilstein, Jr. et al. (US 5786628).

Beilstein teaches a vertical surface mount semiconductor device, comprising:

A semiconductor device 13; bond pads (15) on a surface of said device and adjacent an edge thereof; bumps 29 disposed adjacent selected bond pads, each bump configured to form a conductive joint between one of said selected bond pads and a corresponding terminal 53 of a substrate 41.

See that Beilstein also teaches:

- Bumps adjacent to the bond pads (**Claims 2,12 and 20**)
- A support (to the left of 13) layer 19 (**Claims 3,4-7,10,11,15-17, and 21-23**). See page 8 of the disclosure, lines 4-5.
- Joints 27 adjacent said bond pads (**Claim 14**)
- A Semiconductor device laminated to an adjacent one (**Claims 8,18 and 24**).

Regarding **Claim 19**, see that all the structural limitations recited in the claim have been addressed above. However, the claim also recites an intended use. See *In re Pearson* 181 USPQ 641 (CCPA) which makes clear that terms merely setting forth intended use for, or a property inherent in, an otherwise old composition do not differentiate claimed composition from those known to prior art. See also, *In re Swinehart* [169 USPQ 226] (CCPA 1971) which makes clear that mere recitation of a newly discovered function or property, inherently

possessed by things in prior art, does not cause claim drawn to those things to distinguish over prior art.

Double Patenting

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 1-24 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-21 of prior **U.S. Patent No. 6140696**. This is a double patenting rejection. Although the claims of the instant Application and the claims of Patent No. 6140696 are not the same, the subject matter there between is identical. That is, the semiconductor device ^{claimed} defined in the instant Application inherently includes "an edge, an active surface, and a back side opposite said active surface".


Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See that Choi (Us 6198164) teaches vertically mounted semiconductor devices laminated to one another using a heat dissipating material.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lourdes C. Cruz whose telephone number is 707-306-5691. The examiner can normally be reached on M-F 8:00- 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on 703-308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.


Lourdes Cruz
June 18, 2001

Lourdes C. Cruz
Examiner
Art Unit 2815


EDDIE LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800